



## PATENT CLAIMS

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Class 417  
264,201?

1. A method for manufacturing a suspension bar for a permanent cathode used in an electrolysis of metals, wherein the suspension bar is made of a rigid metal outer jacket and a highly electroconductive inner part inside it, after which the outer jacket is removed at least from one end of the bar, characterized in that a refined steel outer jacket and a highly electroconductive core are in close contact with each other, wherein the parts of the bar are joined to each other by drawing, upsetting, melting or casting.

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2. A method according to claim 1, characterized in that the highly electroconductive core is copper.

15 3. A method according to claim 1, characterized in that the highly electroconductive material is aluminium.

20 4. A method according to claim 1, characterized in that the core is connected to the outer jacket by placing a core preform inside the outer jacket and by drawing an arbor through the preform in a drawing machine.

25 5. A method according to claim 4, characterized in that a steel bar is used as the arbor.

6. A method according to claim 5, characterized in that the steel bar is left inside the highly electroconductive core.

30 7. A method according to claim 1, characterized in that the core is connected to the outer jacket by placing a core preform inside the outer jacket and by pressing the ends of the core, so that the core is extruded tight to the jacket.

8. A method according to claim 1, characterized in that in order to obtain a metallurgical bond between the jacket and the core, the core is attached to the jacket by casting it in molten form inside the solid jacket.

5 9. A method according to claim 8, characterized in that casting is made using the outer jacket as the mould into which the molten core metal is poured.

10 10. A method according to claim 1, characterized in that in order to obtain a metallurgical bond between the jacket and the core, the core preform is placed in solid form inside the outer jacket and then the core is melted inside the outer jacket which remains in sufficiently solid form.

15 11. A method according to claim 8 or 10, characterized in that the outer jacket is preheated before bonding.

12. A method according to claim 8 or 10, characterized in that the outer jacket and the core are heated during bonding.

20 13. A method according to claim 8 or 10, characterized in that the outer jacket and the core are heated after bonding.

25 14. A method according to claim 8 or 10, characterized in that the outer jacket is held in a vertical position with the bottom end closed when core metal is put into the jacket.

15. A method according to claim 8, characterized in that casting is made by immersing the outer jacket into a melt of core metal.

16. A method according to claim 15, characterized in that the outer jacket is immersed in the melt essentially in a horizontal position, wherein the ends of the jacket are closed and that holes are made in the upper part of the jacket for pouring the melt and releasing air.

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17. A method according to claim 15, characterized in that the outer jacket is immersed in the melt essentially in a vertical position, wherein the bottom end of the jacket is closed.

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